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09/235,062 01/20/99 SCHIFFER J 42390.P6280

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EXAMINER

GREEN, M

ART UNIT

PAPER NUMBER

2681

DATE MAILED:

05/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-2, 4, 6-11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hemmie et al. ("Hemmie", US Pat. No.5523768).

Regarding claim 1, Hemmie teaches an apparatus comprising an antenna (elements 310, 420, 422, 312, 322, & 320) and ground plane (278) to be coupled to shielding that includes an opening (296) for the antenna, the antenna to be positioned such that it is radiated through the opening and the ground plane at least partially block emissions through the opening; see Fig.4, and note col.7, lines 42-63.

Hemmie teaches the down converter apparatus including the antenna to be used to receive radio signals, but does not teach the transmission of signals as in the case of the antenna as an intentional radiator. However, the examiner takes Official Notice that it is well known in the art for an antenna to act as either a receiver or a transmitter of radio signals, or both as in the case of a wireless transceiver. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the receiving system as taught by Hemmie to further comprise functionality as an intentional radiator, i.e., also act as a transmitter, in order to provide a user with a means to not only receive but also transmit data in keeping with a modern trend for consumer-desirable, two-way data transmission over wireless media.

Office Action Summary

Application No.

09/235,062

Applicant(s)

SCHIFFER, JEFFREY L.

Examiner

Miguel D. Green

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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Regarding claims 2 and 7, Hemmie teaches the apparatus to further include a shielding connection (soldering seen in Figs., especially Fig.10, item 600) to couple the ground plane to the shielding and vice versa.

Regarding claim 4, Hemmie teaches an apparatus comprising an antenna (elements 310, 420, 422, 312, 322, & 320) and ground plane (278); and shielding (290) including an opening (296), the antenna to be radiated through the opening, the shielding being coupled to the ground plane (note col.8, lines 5-9), the ground plane being oriented to at least partially block emissions through the opening by the device to be shielded; see Fig.4, and note col.7, lines 42-63.

Hemmie teaches the down converter apparatus including the antenna to be used to receive radio signals, but does not teach the transmission of signals as in the case of the antenna as an intentional radiator. However, the examiner takes Official Notice that it is well known in the art for an antenna to act as either a receiver or a transmitter of radio signals, or both as in the case of a wireless transceiver. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the receiving system as taught by Hemmie to further comprise functionality as an intentional radiator, i.e., also act as a transmitter, in order to provide a user with a means to not only receive but also transmit data in keeping with a modern trend for consumer-desirable, two-way data transmission over wireless media.

Regarding claim 6, Hemmie teaches the apparatus as discussed above in the rejection of claim 4, furthermore including a weatherproof housing (230 & 232) for the antenna feed and shield opening that reads on a skin covering. See Fig.4.

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Regarding claim 8, Hemmie teaches the apparatus as discussed above in the rejection of claim 4, furthermore wherein the intentional radiator comprises a radio frequency module (i.e., the RF front end filter, Fig.4).

Regarding claim 9, Hemmie teaches a device to be shielded (i.e., RF front end filter); including an antenna (elements 310, 420, 422^{ant}, 312, 322, & 320) and ground plane (278); shielding (290) enclosing the RF front end filter except for an opening (296) proximate to the antenna, the shielding being coupled to the ground plane (note col.8, lines 5-9), the ground plane being oriented to at least partially block emissions through the opening by the device to be shielded; see Fig.4, and note col.7, lines 42-63.

Hemmie teaches the down converter apparatus including the antenna to be used to receive radio signals, but does not teach the transmission of signals as in the case of the antenna as an intentional radiator. However, the examiner takes Official Notice that it is well known in the art for an antenna to act as either a receiver or a transmitter of radio signals, or both as in the case of a wireless transceiver. It would have been obvious to one of ordinary skill in the art at the time of the invention to allow the receiving system as taught by Hemmie to further comprise functionality as an intentional radiator, i.e., also act as a transmitter, in order to provide a user with a means to not only receive but also transmit data in keeping with a modern trend for consumer-desirable, two-way data transmission over wireless media.

Regarding claim 10, Hemmie teaches the apparatus as discussed above in the rejection of claim 9, furthermore including a weatherproof housing (230 & 232) for the antenna feed and shield opening that reads on a skin covering. See Fig.4.

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Regarding claim 11, Hemmie teaches the apparatus as discussed above in the rejection of claim 9, furthermore wherein the device (i.e., RF filter module) to be shielded is integrated with the intentional radiator, in that the parts altogether comprise a microwave system. See Figs.3&4.

Regarding claim 13, Hemmie teaches the apparatus as discussed above in the rejection of claim 9, furthermore wherein the intentional radiator comprises a radio frequency module (i.e., the RF front end filter, Figs.3&4).

Regarding claims 14-17, the method(s) for integrating components, positioning the antenna through the opening, and coupling shielding to ground via electrical (i.e., soldering) and/or mechanical connection is inherent in the teaching of Hemmie in constructing the structural apparatus and integrated system as discussed above. Furthermore, such methods for constructing RF component systems on printed circuit boards, using soldering and mechanical connections for coupling etc., are well known.

Regarding claims 18-20, Hemmie teaches the apparatus as discussed above, furthermore with a means (the shield 290 itself; see Fig.4) for shielding including an opening antenna; and means (the solder; especially Fig.6, item 600) for coupling the shielding to the ground plane. Furthermore, such shielding means is well known to comprise one of a metallic paint or a metal enclosure, in keeping with Gauss' Law regarding metallic conduction. Said means for coupling is also taught by Hemmie to comprise a mechanical connector, as in the ground clips (440) that firmly contact and hold the shield in-place (note col.8, lines 27-32), or a soldered connection (600); see Fig.6.

3. Claims 3, 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hemmie as applied to claims 1, 4 and 9 above, respectively, and further in view of Araki et al. ("Araki" US Pat. No.5628053).

Regarding claims 3, 5 and 12, Hemmie teaches the apparatus as previously discussed comprising a printed circuit board (PCB), but does not teach wherein the intentional radiator antenna being disposed of on a first layer of the PCB and the ground plane on a second layer of the PCB. However, Araki teaches an integrated multi-layered microwave printed circuit board including an intentional radiator antenna portion (21) on a first layer and the ground plane (3) on a second layer; note col.6, lines 15-47 and Fig.1. It would have been obvious to one of ordinary skill in the art at the time of the invention for Hemmie to include a PCB having ~~a~~ multiple layers, with the antenna and ground plane disposed of on different layers as taught by Araki, since this provides for greater efficiency of compact circuit design.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Andersson (US Pat. No.5892481) teaches an antenna unit with a ground plane and shielding contained in a structure that includes a radome (21) covering that reads on a skin covering (see Fig.5).

Smith et al. (US Pat. No.5493719) teaches a chip (i.e., printed circuit board) antenna that is covered by a lens that reads on a skin covering; see col.3, line 65 – col.4, line 3 and note Fig.2.

Response to Arguments

5. Applicant's arguments filed March 1, 2001 have been fully considered but they are not persuasive. The applicant's argument appears to hinge on the fact that the ground plane on the intentional radiator at least partially blocks emissions through an opening in shielding. However, contrary to the argument stated on page 8 (first paragraph), the ground plane as taught by Hemmie does play a part in blocking or partial blocking emissions through the opening, despite the fact that it lies normal to the opening (i.e., cutout). The shielding (with cutout) being grounded via the ground plane provides at least partial emissions blocking, and thus, the ground plane in combination plays its part.

6. The examiner agrees with the applicant's response regarding the alleged duplication of claims 4 and 7 in light of claims 1 and 2, respectively (p.4 of applicant's response). Therefore, the examiner respectfully withdraws this claim objection (para.3 of first Office Action).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miguel D. Green whose telephone number is 703-308-6729. The examiner can normally be reached on Mon-Fri (9am - 6:15pm), second bi-week Mon OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on 703-305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.



MDG
May 21, 2001


NAY MAUNG
PRIMARY EXAMINER